

CLAIMS

What is claimed is:

1. A multi-directional stretch performance fabric comprising:
a two-sided single layer stretch warp knit fabric further comprising a first side and a second side that are integrally formed using at least two guide bars, such that the first and second sides have at least one different quality from the other side,
thereby providing a multi-directional stretch performance fabric for use alone or as an article including the fabric.
2. The fabric according to claim 1, wherein the fabric is reversible.
3. The fabric according to claim 1, wherein at least two guide bars are used without the warp knit fabric including a spandex yarn.
4. The fabric according to claim 1, wherein at least three guide bars are used where the warp knit fabric includes a spandex yarn.
5. The fabric according to claim 1, wherein the at least two guide bars include a first front guide bar, a second middle guide bar, and a third back guide bar, wherein the guide bars are each fully or partly threaded.
6. The fabric according to claim 1, wherein the at least one different quality includes a color difference.
7. The fabric according to claim 6, wherein the color difference results from a dyeing process.
8. The fabric according to claim 7, wherein the dyeing process is selected from the group consisting of solution dyeing, yarn dyeing, fabric piece dyeing, and the like, and combinations thereof.

9. The fabric according to claim 6, wherein the color difference includes a shade difference.
10. The fabric according to claim 1, wherein the at least one different quality includes at least one side having a metallic appearance.
11. The fabric according to claim 1, wherein the at least one different quality includes a fiber type difference.
12. The fabric according to claim 1, wherein the fiber is selected from the group consisting of nylon, polyester, cotton, wool, and combinations thereof.
13. The fabric according to claim 1, wherein the fiber type is selected from the group consisting of multifilament, textured multifilament, spun staple, and the like, and combinations thereof.
14. The fabric according to claim 1, wherein the fabric includes a stretch yarn component.
15. The fabric according to claim 14, wherein the stretch yarn component is spandex, poly butylene terephthalate (PBT) and the like.
16. The fabric according to claim 1, wherein the at least one different quality includes a fiber size difference between the first and second sides.
17. The fabric according to claim 1, wherein the fiber type includes at least one type of microdenier fiber(s).
18. The fabric according to claim 1, wherein the at least one different quality includes a pattern difference between the first and second sides.
19. The fabric according to claim 18, wherein pattern difference is selected from the group consisting of printed, embossed, speciality yarn, embroidery, stitch-based, and the

like, and combinations thereof.

20. The fabric according to claim 1, wherein the at least one different quality includes a texture difference between the first and second sides.

21. The fabric according to claim 1, wherein the fabric is formed using a stitch evasion technique.

22. The fabric according to claim 1, wherein the at least one different quality provides for at least 90% quality unique to each side.

23. The fabric according to claim 1, wherein the at least one different quality includes a finish-enhanced difference between the first and second sides.

24. The fabric according to claim 1, wherein the at least one different quality includes a brushed surface difference between the first and second sides.

25. The fabric according to claim 1, wherein the at least one different quality includes a chemically treated difference between the first and second sides.

26. The fabric according to claim 1, wherein the at least one different quality includes a sueded difference between the first and second sides.

27. The fabric according to claim 1, wherein the at least one different quality includes a sanded face between the first and second sides.

28. The fabric according to claim 1, wherein the at least one different quality includes a brightness difference between the first and second sides.

29. The fabric according to claim 1, wherein the at least one different quality includes an opacity difference between the first and second sides.

30. The fabric according to claim 1, wherein the at least one different quality between the first and second sides affects fabric performance.

31. The fabric according to claim 30, wherein the quality is selected from the group consisting of wicking, breathability, water-resistance, stain resistance, comfort, heat transfer, insulation, cooling, flame retardancy, reflectivity, and combinations thereof.
32. The fabric according to claim 31, wherein the difference is caused by different fiber sizes on the first and second sides.
33. The fabric according to claim 31, wherein the difference is caused by at least one chemical treatment.
34. The fabric according to claim 1, wherein the fabric weight ranges between about four oz/yd² and about 12 oz/yd² depending upon the application.
35. The fabric according to claim 1, wherein fiber components forming the fabric have weight ranges between about 20 to about 150 denier.
36. A single layer warp-knit fabric comprising:
a non-pile, two-sided single layer stretch warp knit fabric further comprising a first side and a second side that are integrally formed using at least two guide bars, such that the first and second sides have at least one different quality,
thereby providing a multi-directional stretch performance fabric for use alone or as article.
37. An article using a multi-directional stretch performance fabric comprising:
a two-sided single layer stretch warp knit fabric further comprising a first side and a second side that are integrally formed using at least two guide bars, such that the first and second sides have at least one different quality,
wherein the article is formed from the multi-directional stretch performance fabric for

providing an article having at least one different quality on its outside and its inside.

38. The article according to claim 37 wherein the article is a garment.

39. The article according to claim 37, wherein the article is used in applications including active sportswear, swimwear, performance wear, athletic wear, intimate apparel, medical, fitness wear, industrial/protective wear, sleep wear, military, security or police or other law enforcement protective wear.

40. The article according to claim 37, wherein the article is an accessory.

41. A method for forming a multi-directional stretch performance fabric comprising the steps of:

providing a warp knitting machine having at least two guide bars with yarn components;

providing a knitting pattern for making a single layer warp knit fabric using a stitch evasion technique;

forming a two-sided single layer stretch warp knit fabric according to the pattern on the machine, the fabric further comprising a first side and a second side that are integrally formed using the at least two guide bars, such that the first and second sides of the fabric have at least one different quality from the other side,

thereby providing a multi-directional stretch performance fabric for use alone or as an article including the fabric.

42. The method according to claim 41, further including the step of processing the fabric to create at least one different quality between the first and second sides of the fabric.

43. The method according to claim 42, wherein the step includes: napping, brushing, sueding, chemical treating, finishing, printing, embossing, and combinations thereof.